WHAT IS CLAIMED IS:

1. A variable pressure regulator control device comprising:

a valve body having a fluid inlet, a fluid outlet, a fluid pressure-sensing chamber, and a valve seat in fluid communication with said inlet and defining an opening into said chamber;

a resilient member forming a wall of said chamber which is responsive to pressure in said chamber and which is self-restoring;

a valve stem connected to said member and extending through said chamber towards said valve seat;

a valve element supported on said valve stem and cooperating with said valve seat, said valve element being located between the valve seat and said fluid inlet;

an adjuster mounted to said valve body in a position to deflect said resilient member and move the valve element away from the valve seat while a portion of said resilient member connected to said stem flexes in response to pressure changes within said chamber to control the position of the valve element with respect to the valve seat;

wherein said valve body includes a base incorporating said inlet, said outlet, and said valve seat;

a retainer mounted atop said base, said retainer having an aperture for receiving said adjuster; and

a cover fixing said adjuster for rotation therewith such that deflection of said resilient diaphragm is capable of being adjusted by rotation of said cover.

2. The device of Claim 1, additionally comprising a catch mechanism defining a plurality of angular positions relative to said valve body, said catch mechanism being configured to position said cover in one of said plurality of angular positions.

3. The device of Claim 2, wherein said catch mechanism comprises a plurality of recesses defined by one of said valve body and said cover, and at least one projection fixed in relation to the other of said valve body and said cover, said at least one projection configured to engage one of said plurality of recesses.

4. The device of Claim 3, wherein said at least one projection is biased into engagement with said recess such that rotation of said cover is inhibited in the absence of rotational torque on said cover and rotation of cover is permitted in response to rotational torque on said cover.

5. The device of Claim 4, wherein said recesses are defined by said valve body and said at least one projection is fixed for rotation with said cover, said cover additionally comprising at least one flexible tab portion, wherein said at least one projection is defined by a surface of said flexible tab portion.

6. The device of Claim 1, additionally comprising an indicator arrangement configured to relate an angular position of said cover with respect to said valve body to a predetermined fluid outlet pressure.

7. The device of Claim 6, wherein said indicator arrangement comprises a fluid outlet pressure scale on one of said valve body and said cover, and a reference indicia on the other of said valve body and said cover, said reference indicia capable of being aligned with a demarcation of said fluid outlet pressure scale to achieve a desired fluid outlet pressure.

8. The device of Claim 7, wherein said fluid outlet pressure scale comprises an index scale and said demarcations correspond to a range of fluid outlet pressures, said reference indicia comprising a view window approximately sized and shaped to display a single demarcation of said index scale.

9. The device of Claim 1, wherein said cover includes at least one flexible lock tab, said flexible lock tab defining a lock surface, said valve body including a retaining surface, said lock surface being configured to engage said retaining surface to substantially fix said cover in an axial position with respect to said valve body.

10. The device of Claim 9, wherein said retaining surface is an uninterrupted, annular surface defined by said retainer of said valve body.

11. A method of regulating fluid pressure comprising the steps of:

preventing the flow of a fluid through a valve seat into a fluid pressure chamber within a valve body, utilizing a flexible resilient diaphragm forming a wall of said chamber when said diaphragm is not mechanically deflected;

deflecting a self-restoring section of said diaphragm to introduce fluid into said fluid chamber;

flexing said self-restoring section in response to pressure changes within said chamber;

controlling the flow of fluid through said valve seat into said chamber with a valve element mounted to move in response to the flexing of said diaphragm section in a manner such that increasing the pressure in said chamber moves said valve element towards said valve seat and decreasing the pressure in said chamber moves said valve element away from said valve seat;

allowing fluid to flow from said chamber to an outlet in said valve body;

adjusting the pressure by rotating a cover having an adjuster fixed for rotation therewith relative to said valve body, said adjuster deflecting said diaphragm in a manner to control the flexing of said diaphragm section to obtain a desired outlet pressure;

defining a plurality of angular positions relative to said valve body; and

positioning said cover in one of said plurality of angular positions.

12. A variable pressure regulator control device comprising:

a base having a wall forming a wall of a fluid pressure-sensing chamber, said base further including a fluid inlet in communication with a valve seat opening to the chamber, and a fluid outlet in communication with said chamber;

a flexible, resilient diaphragm forming a wall of said chamber;

a retainer clamping an annular peripheral portion of said diaphragm between the base and the retainer;

a valve element mounted to a central section of said diaphragm cooperating with said valve seat in a manner such that increasing pressure in said chamber moves the valve element in a valve closing direction and decreasing the pressure in the chamber moves the valve element in a valve opening direction;

an adjuster threadably connected to said retainer and having a flange which engages said diaphragm so as to deflect the diaphragm towards the valve seat, said flange defining a central section of said diaphragm which is movable in response to fluid pressure within said chamber; and

a cover fixing said adjuster for rotation therewith such that rotation of said cover results in axial movement of said adjuster to adjust the deflection of said resilient diaphragm.

13. The device of Claim 12, additionally comprising a catch mechanism defining a plurality of angular positions relative to said retainer, said catch mechanism being configured to position said cover in one of said plurality of angular positions.

14. The device of Claim 12, additionally comprising an indicator arrangement configured to relate an angular position of said cover with respect to said retainer to a predetermined fluid outlet pressure.

15. The device of Claim 12, wherein said cover includes at least one flexible lock tab, said flexible lock tab defining a lock surface, said valve body including a retaining surface, said lock surface being configured to engage said retaining surface to substantially fix said cover in an axial position with respect to said valve body.

16. A variable pressure regulator control device comprising:

a valve body having a fluid inlet, a fluid outlet, a fluid pressure-sensing chamber, and a valve seat in fluid communication with said inlet and defining an opening into said chamber;

a member forming a movable wall of said chamber which is responsive to pressure in said chamber;

a valve element mounted to said member and cooperating with said valve seat in a manner such that increasing pressure in said chamber moves the valve element in a valve closing direction and decreasing the pressure in the chamber moves the valve element in a valve opening direction;

an adjuster engaged with said valve body such that rotation of said adjuster deflects said member thereby adjusting a fluid output pressure of said pressure regulator;

a cover fixing said adjuster for rotation therewith such that deflection of said member is capable of being adjusted by rotation of said cover.

17. The device of Claim 16, additionally comprising a catch mechanism defining a plurality of angular positions relative to said valve body, said catch mechanism being configured to position said cover in one of said plurality of angular positions.

18. The device of Claim 17, wherein said catch mechanism comprises a plurality of recesses defined by one of said valve body and said cover, and at least one projection fixed in relation to the other of said valve body and said cover, said at least one projection configured to engage one of said plurality of recesses.

19. The device of Claim 18, wherein said at least one projection is biased into engagement with said recess such that rotation of said cover is inhibited in the absence of rotational torque on said cover and rotation of cover is permitted in response to rotational torque on said cover.

20. The device of Claim 19, wherein said recesses are defined by said valve body and said at least one projection is fixed for rotation with said cover, said cover additionally comprising at least one flexible tab portion, wherein said at least one projection is defined by a surface of said flexible tab portion.

21. The device of Claim 16, additionally comprising an indicator arrangement configured to relate an angular position of said cover with respect to said valve body to a predetermined fluid outlet pressure.

22. The device of Claim 21, wherein said indicator arrangement comprises a fluid outlet pressure scale on one of said valve body and said cover, and a reference indicia on the

other of said valve body and said cover, said reference indicia capable of being aligned with a demarcation of said fluid outlet pressure scale to achieve a desired fluid outlet pressure.

23. The device of Claim 22, wherein said fluid outlet pressure scale comprises an index scale and said demarcations correspond to a range of fluid outlet pressures, said reference indicia comprising a view window approximately sized and shaped to display a single demarcation of said index scale.

24. The device of Claim 16, wherein said cover includes at least one flexible lock tab, said flexible lock tab defining a lock surface, said valve body including a retaining surface, said lock surface being configured to engage said retaining surface to substantially fix said cover in an axial position with respect to said valve body.

25. The device of Claim 24, wherein said retaining surface is an uninterrupted, annular surface.